

WHAT IS CLAIMED IS:

1. A method for allocating blocks of a shared memory in a data processing

system, the method comprising:

receiving a memory allocation request;

5

determining whether access to the shared memory is permitted for purposes of the memory allocation request;

identifying a next available memory block in response to the memory allocation request based on a determination that access to the shared memory is permitted for purposes of the memory allocation request; and

designating the next available memory block in response to the request.

2. The method of claim 1 wherein identifying a next available memory block in response to the memory allocation request based on a determination that access to the shared memory is permitted for purposes of the memory allocation request includes:

15

accessing an area of memory designating a location of a next available memory block.

3. The method of claim 1 wherein designating the next available memory block in response to the request includes:

20

updating an area of memory with an address of an allocated memory block.

4. A memory allocating system, comprising;

LAW OFFICES
FINNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N.W.
WASHINGTON, D.C. 20005
202-408-4000

a shared memory;

a protocol specifying a method for allocating blocks of the shared memory; and
a processor performing the method for allocating blocks of the shared memory by
receiving a memory allocation request;

5 determining whether access to the shared memory is permitted for purposes of the
memory allocation request;

identifying a next available memory block in response to the memory allocation
request and based on a determination that access to the shared memory is permitted for
purposes of the memory allocation request; and

designating the next available memory block in response to the request.

5. The system of claim 4, wherein determining whether access to the shared
memory is permitted for purposes of the memory allocation request includes:

monitoring an indicator that indicates whether the memory allocation request is
15 permitted.

6. The system of claim 4 wherein identifying a next available memory block
in response to the memory allocation request and based on a determination that access to
the shared memory is permitted for purposes of the memory allocation request includes:

20 accessing an area of memory designating a location of a next available memory
block.

7. The method of claim 4 wherein designating the next available memory block in response to the request includes:

updating an area of memory with an address of an allocated memory block.

5 8. A computer-readable medium containing computer-readable instructions for performing a method on a data processing system for allocating blocks of a shared memory, the method comprising:

receiving a memory allocation request;

determining whether access to the shared memory is permitted for purposes of the memory allocation request;

identifying a next available memory block in response to the memory allocation request and based on a determination that access to the shared memory is permitted for purposes of the memory allocation request; and

designating the next available memory block in response to the request.

15

9. The computer-readable medium of claim 8 wherein determining whether access to the shared memory is permitted for purposes of the memory allocation request includes:

monitoring an indicator that indicates whether the memory allocation request is permitted.

LAW OFFICES
FINNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N.W.
WASHINGTON, D.C. 20005
202-408-4000

10. The computer-readable medium of claim 8 wherein identifying a next available memory block in response to the memory allocation request and based on a determination that access to the shared memory is permitted for purposes of the memory allocation request includes:

5 accessing an area of memory designating a location of a next available memory
block.

11. The computer-readable medium of claim 8 wherein designating the next available memory block in response to the request includes:

updating an area of memory with an address of an allocated memory block.

12. A method for allocating a memory by assigning blocks of a designated size in a data processing system, the method comprising:

determining whether a request to secure access to a block of memory from an executing thread is permitted;

accessing a memory allocation table to determine an address for a next available memory block;

designating the next available memory block for the executing thread in response to the request;

updating the memory allocation table to reflect the designation of the next available memory block for the executing thread in response to the request; and

coordinating shared access for all executing threads to the memory.

13. The method of claim 12 wherein designating the next available memory block for the executing thread in response to the request includes:

providing the address for a next available memory block to the executing thread.

5 14. The method of claim 12 wherein updating the memory allocation table to reflect the designation of the next available memory block for the executing thread in response to the request includes:

identifying an address for a new next available memory block.

10 15. A computer-readable medium containing instructions for performing a method for allocating shared memory among threads of control in a data processing system, the method comprising:

determining whether a request to secure for access to a block of memory from an executing thread is permitted;

15 accessing a memory allocation table to determine an address for a next available memory block;

designating the next available memory block for the executing thread in response to the request;

20 updating the memory allocation table to reflect the designation of the next available memory block for the executing thread in response to the request; and coordinating shared access for all executing threads to the memory.

LAW OFFICES

FINNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N.W.
WASHINGTON, D.C. 20005
202-408-4000

16. A system for coordinating allocation of a memory by assigning blocks of memory in a data processing system, the system comprising;

an area of the memory designated to coordinate assignment of the memory to a thread requiring access to memory; and

5 a protocol for serializing a thread accessing memory based on information reflecting usage of the memory.

LAW OFFICES
FINNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N.W.
WASHINGTON, D.C. 20005
202-408-4000